

CLAIMS

What is claimed is:

1. A vehicle comprising;
a brake system (32),
5 an operator space,
a cross beam (16),
a pedal arm (20),
a support bracket (18) supported the vehicle (24) and pivotally
supporting said pedal arm (20) forward of said operator space for operational
10 movement in an operating range between a forward brake applying position and a
rearward release position,
a crash control device (60) having predetermined resilient
characteristics for interacting between said cross beam (16) and said pedal arm (20) in
the event of rearward movement of said pedal arm (20) out of said range to limit
15 movement of said pedal arm (20) toward said operator space,
a hydraulic system responsive to said pedal arm (20) for pressurizing
hydraulic fluid to actuate said vehicle brake system (32), and
a fluid release mechanism (34) for relieving hydraulic fluid in said
hydraulic system in response to crash conditions to allow said pedal arm (20) to move
20 forwardly unimpeded by hydraulic fluid.

2. An assembly as set forth in claim 1 wherein said fluid release
mechanism (34) includes a crash sensor (38) and a fluid relief device (40) responsive

to said sensor (38) for relieving said hydraulic fluid pressure in response to said crash conditions.

3. An assembly as set forth in claim 2 wherein said fluid relief device (40) includes a cylinder and a piston (42) slideably disposed in said cylinder for movement between a normal operating position retaining a minimal amount of hydraulic fluid from said hydraulic system and an accumulator position for accumulating hydraulic fluid from said hydraulic system.

10 4. An assembly as set forth in claim 3 wherein said fluid relief device (40) includes a shaft (46) extending from said piston (42) to a distal end supported by said cylinder and a removable stop (52) engaging said shaft (46) to hold said piston (42) in said normal operating position and removable to allow movement of said shaft (46) and said piston (42) to said accumulator position.

15 5. An assembly as set forth in claim 4 wherein said sensor (38) produces an electrical signal and said stop (52) comprises a fuseable link responsive to said electrical signal from said sensor (38) for disintegration to allow movement of said shaft (46).

20 6. An assembly as set forth in claim 5 wherein said cylinder includes a link compartment (50) for holding said fuseable link (52) and for receiving a replacement fuseable link (52) for resetting said hydraulic system.

7. An assembly as set forth in claim 1 wherein said crash control device (60) comprises a spring member disposed between said cross beam (16) and said pedal arm (20).
- 5 8. An assembly as set forth in claim 1 wherein said crash control device (60) comprises a curved leaf spring disposed between said cross beam (16) and said pedal arm (20).
9. An assembly as set forth in claim 1 wherein said crash control device
10 (60) comprises a curved leaf spring disposed between said cross beam (16) and said pedal arm (20).
10. An assembly as set forth in claim 1 wherein said crash control device
15 (60) comprises a plastic member consisting of an organic polymeric material and disposed between said cross beam (16) and said pedal arm (20).
11. An assembly as set forth in claim 10 wherein said plastic member includes a honeycombed (62, 64) structure.
- 20 12. A vehicle comprising;
a brake system (32),
an operator space,
a pedal arm (20),

a support bracket (18) supported by the vehicle (24) and pivotally supporting said pedal arm (20) forward of said operator space for operational movement in an operating range between a forward brake applying position and a rearward release position,

5 a hydraulic system responsive to said pedal arm (20) for pressurizing hydraulic fluid to actuate said vehicle brake system (32),

a crash sensor, and

a cylinder and a piston (42) slideably disposed in said cylinder for movement between a normal operating position retaining a minimal amount of
10 hydraulic fluid from said hydraulic system and an accumulator position for accumulating hydraulic fluid from said hydraulic system in response to crash conditions to allow said pedal arm (20) to move forwardly unimpeded by hydraulic fluid.

15 13. An assembly as set forth in claim 12 including a shaft (46) extending from said piston (42) to a distal end supported by said cylinder and a removable stop (52) engaging said shaft 46 to hold said piston (42) in said normal operating position and removable to allow movement of said shaft (46) and said piston (42) to said accumulator position.

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14. An assembly as set forth in claim 13 wherein said sensor (38) produces an electrical signal and said stop (52) comprises a fuseable link responsive to said electrical signal from said sensor (38) for disintegration to allow movement of said shaft (46).

15. An assembly as set forth in claim 14 wherein said cylinder includes a link compartment (50) for holding said fuseable link (52) and for receiving a replacement fuseable link (52) for resetting said hydraulic system.

5 16. A vehicle comprising;
an operator space,
a cross beam (16),
a pedal arm (20),
a support bracket (18) supported by the vehicle (24) and pivotally
10 supporting said pedal arm (20) forward of said operator space for operational movement in an operating range between a forward brake applying position and a rearward release position, and
a crash control device (60) having resilient characteristics for interacting between said cross beam (16) and said pedal arm (20) in the event of
15 rearward movement of said pedal arm (20) out of said range to limit movement of said pedal arm (20) toward said operator space.

17. An assembly as set forth in claim 16 wherein said crash control device (60) comprises a spring member disposed between said cross beam (16) and said
20 pedal arm (20).

18. An assembly as set forth in claim 17 wherein said crash control device (60) comprises a curved leaf spring disposed between said cross beam (16) and said pedal arm (20).

19. An assembly as set forth in claim 17 wherein said crash control device (60) comprises a curved leaf spring disposed between said cross beam (16) and said pedal arm (20).

5 20. An assembly as set forth in claim 17 wherein said crash control device (60) comprises a plastic member consisting of an organic polymeric material and disposed between said cross beam 16 and said pedal arm (20).

21. An assembly as set forth in claim 20 wherein said plastic member
10 includes a honeycombed (62, 64) structure.